SESSION 4 – SUSTAINABLE DEVELOPMENT GOALS (SDGs)

CITIZEN SCIENCE AND THE SDGS

Monday September 7, 2020

Bridging the Divide: Connecting Earth Observations, Statistical and Geographic Information for Better Decision Making

#2020AmericasSymposium
IIASA/ Dilek Fraisl

Dilek Fraisl is a research scholar at the Data Ecosystems for Sustainability Program of the International Institute for Applied Systems Analysis based in Austria. Dilek is also a PhD candidate at the University of Natural Resources and Life Science Vienna (BOKU). She is the chair of the European Commission funded "WeObserve SDGs & Citizen Science Community of Practice" that aims to foster collaboration and consolidate knowledge on the contribution of citizen science to the SDGs across the global citizen science and data and statistics communities. Dilek is also co-chairing the Citizen Science Global Partnership SDGs & Citizen Science Maximization Group, and a member of the Sustainable Solutions Development Network - Thematic Research Network on Data and Statistics.
IIASA/ Presentation Agenda

• Background
• Methodology
• Results
• Examples/Success Stories
• Challenges, Gaps and Opportunities
• Summary/Key Takeaways
Mapping citizen science contributions to the UN sustainable development goals

Dilek Frais1,2, Jillian Campbell3, Linda See1, Uta WohN4, Jessica Wardlaw5, Margaret Gold8, Inian Moorthy1, Rosa Arias6, Jaume Plera6, Jessica L. Oliver7,10, Joan Mas4,1, Marianne Penker2, Steffen Fritz2

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Abstract
The UN Sustainable Development Goals (SDGs) are a vision for achieving a sustainable future. Reliable, timely, comprehensive, and consistent data are critical for measuring progress towards, and ultimately achieving, the SDGs. Data from citizen science represent one new source of data that could be used for SDG reporting and monitoring. However, information is still lacking regarding the current and potential contributions of citizen science to the SDG indicator framework. Through a systematic review of the metadata and work plans of the 244 SDG indicators, as well as the identification of past and ongoing citizen science initiatives that could directly or indirectly provide data for these indicators, this paper presents an overview of where citizen science is already contributing and could contribute data to the SDG indicator framework. The results demonstrate that citizen science is "already contributing" to the monitoring of 5 SDG indicators, and that citizen science "could contribute" to 76 indicators, which, together, equates to around 33%. Our analysis also shows that the greatest inputs from citizen science to the SDG framework relate to SDG 15 Life on Land, SDG 11 Sustainable Cities and Communities, SDG 3 Good Health and Wellbeing, and SDG 6 Clean Water and Sanitation. Realizing the full potential of citizen science requires demonstrating its value in the global data ecosystem, building partnerships around citizen science data to accelerate SDG progress, and leveraging investments to enhance its use and impact.

Keywords Sustainable Development Goals (SDGs) · Citizen science · SDG indicators · Tier classification for SDG indicators · Crowdsourcing · Community-based monitoring
The WeObserve SDGs and Citizen Science Community of Practice (SDGs CoP) is an open platform for citizen science/citizen observatories and the SDGs.

Our aim is to connect citizen science practitioners, non-governmental organizations (NGOs) and government officials; UN agencies; local initiatives; and the broader data and stats communities to share and exchange knowledge, ideas, and resources on how to demonstrate the value of citizen science data and impact for SDG achievement.

SDGs are a roadmap to achieve a healthy, prosperous and fair future for all. Achieving the SDGs requires informed decisions that are based on accurate, timely and comprehensive data. Even though data availability has improved over the last decade, there are still major gaps in information and knowledge for guiding policy formulation and implementation. New innovative approaches to data collection, such as citizen science/citizen observatories, which is very broadly defined as public participation in scientific research, can contribute to SDG monitoring. In addition, citizen science could also help mobilize citizen action and engagement.
Public Participation

- From projects, where citizens primarily contribute data to initiatives, citizens design the research with scientists.

Voluntary contribution

- Contributions on voluntary basis; no professional background or disposable income.

Knowledge production

- Production of scientific knowledge and clear research outcomes that include monitoring & observation.
Methodology

1. Compile all SDG indicators

2. Review metadata and workplan

3. Search for citizen science projects (e.g. EC300 project list, SciStarter, Zooniverse, Google, the literature)

4. For each SDG indicator, determine if citizen science is already contributing, could contribute or no alignment at present

5. First peer review by co-authors

6. Second peer review by lead author and UN Environment

7. Final mapping of CS contribution to SDG indicators
SESSION 4 – Sustainable Development Goals
Litter Intelligence

Sustainable Coastlines

LITTER SURVEY #01 • 26 October 2018 • Waikanae Beach, Gisborne, New Zealand  www.sustainablecoastlines.org/litterproject
FreshWaterWatch

6.3.2 - Proportion of bodies of water with good ambient water quality

FreshWaterWatch has a global water quality database based on the contributions made by 8,000+ citizen scientists for more than 2,500 water bodies.
Picture Pile

Do you see deforestation over time?

- Total Score: 294
- Sorted: 0.01768%
- Weekly Score: 0

- No
- Maybe
- Yes
<table>
<thead>
<tr>
<th>Tier</th>
<th>Indicator</th>
<th>Description</th>
<th>Resources</th>
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<tbody>
<tr>
<td>Tier I</td>
<td>Global Forest Watch, LACo-Wiki, Picture File: Deforestation, FotoQuestGo</td>
<td>High quality remote sensing imagery of areas with forest cover is widely available, and citizen science approaches, such as participatory crowdsourcing, volunteered geographic information and more are identifying and categorising the nature of forest cover, and forest cover</td>
<td><a href="https://www.globalforestwatch.org/">https://www.globalforestwatch.org/</a>, <a href="https://laco-wiki.net/en/Welcome">https://laco-wiki.net/en/Welcome</a></td>
</tr>
<tr>
<td>Tier I</td>
<td>eBird, Bird Track, Seabirds, PanEuropean Common Bird Monitoring Scheme, International Water Bird Census, IBA Canada Regional Carcasseter Networks, Maritime Breeding Bird Atlas, North American Breeding Bird Survey, eNature, Natara, Natara Alert, and many more bird monitoring &amp; biodiversity projects...</td>
<td>Citizen science is already informing this indicator on protected areas, Important Bird and Biodiversity Areas (IBAs) and Key Biodiversity Areas (KBA) schemes (Fritz et al., 2019, SDBN TrAIDS, 2019). 44% of each terrestrial KBA is covered by existing protected area (2019). The largest subset of KBAs is identified using data on bird and mammal distributions, and the fields of bird monitoring and biodiversity are already contributing monitoring of this indicator.</td>
<td><a href="https://www.cepf.net/sites/default/files/iba-statusreport2015.pdf">https://www.cepf.net/sites/default/files/iba-statusreport2015.pdf</a>, <a href="https://www.birdlife.org/sites/default/files/attachments/iba-monitoring-factsheet-birdlife-international.pdf">https://www.birdlife.org/sites/default/files/attachments/iba-monitoring-factsheet-birdlife-international.pdf</a></td>
</tr>
<tr>
<td>Tier I</td>
<td>RelaPhone, Amazon Aerobotany, Mobi KRC, Logging Roads, FotoQuest Go, Forest Eyes, Forest Watchers, Picture Pile</td>
<td>The citizen science initiatives mentioned in the column to the left are also an input to some of this multi-part indicator. One of the sub-indicators on both the direction of change (whether there is a loss or gain in how this rate is changing over time; the latter is important in order progress among countries that are losing forest area, but have maintained their annual forest area loss.</td>
<td><a href="https://www.mdpi.com/2072-4204/8/10/869">https://www.mdpi.com/2072-4204/8/10/869</a>, <a href="https://bird.globalforestwatch.org/people/tracing-the-paths-to-forest-destruction-new-crowdsourcing-initiative-tackles-logging-roads-in-the-congo-basin">https://bird.globalforestwatch.org/people/tracing-the-paths-to-forest-destruction-new-crowdsourcing-initiative-tackles-logging-roads-in-the-congo-basin</a>, <a href="https://fotoquest-go.org/en/">https://fotoquest-go.org/en/</a>, <a href="https://blog.iana.wf/2016/05/17/picture-pile-gaming-for-science">https://blog.iana.wf/2016/05/17/picture-pile-gaming-for-science</a>, <a href="https://geo.wiki.org/games/picturepile/">https://geo.wiki.org/games/picturepile/</a>.</td>
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Way Forward – Some of the Recommendations

- Building awareness and sharing experiences on the use of citizen science for the SDGs;
- Developing case studies or success stories where citizen science data have been used in innovative ways by NSOs;
- Identifying criteria for ensuring data quality or data quality assurance procedures;
- Integrating citizen science into the methodologies of SDG indicators
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Thank You
Questions and answers will be received after the final presentation in this session.

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